

Application No. 10/523,960
Amendment dated October 14, 2008
Office Action mail date: April 15, 2008

Atty. Docket No. 10554/10
PATENT APPLICATION

AMENDMENTS TO THE DRAWINGS

Submitted herewith please find two sheets of drawings in compliance with 37 C.F.R.

§ 1.84. The Examiner is respectfully requested to acknowledge receipt of these drawings.

Attachments: One Replacement Sheet for Figure 4 (now Figures 4(A)-(B));
One New Sheet of drawings for Figures 4(C)-(D).

REMARKS/ARGUMENTS

Claims 1-3, 5-8, 16, 18, 21-25, 27-31, 36-38, 41, and 50 are pending in the application. Claims 2, 3, 6, 8, 9, 16, 18, 21, 22, 24, 25, 28, 30, and 31 are withdrawn from consideration. Claims 1, 5, 7, 23, 27, 29, 36-38, and 41 are rejected. Claims 1, 16, 23, 36-38, and 50 have been amended and are discussed below.

Claims 1, 5, 7, 23, 27, and 29 stand rejected under 35 U.S.C. § 102(b) as anticipated by Fujimaki (JP405180917A). Claims 36-38 and 41 stand rejected under 35 U.S.C. §102(b) as anticipated by, or in the alternative, under 35 U.S.C. § 103(a) as obvious over Fujimaki. Claim 50 has been objected to as being dependent upon a rejected base claim.

Applicant thanks the Examiner for providing a computer translation of portions of Fujimaki. In reviewing the translation, Applicant notes that the Fujimaki disclosure relates to a low temperature superconducting device, based on a niobium superconductor constructed on a polyimide flexible substrate (*see, e.g.* paragraphs 17 and 18 of the machine translation of Fujimaki). Applicant submits that, for several reasons, the skilled artisan would not have considered applying the teachings of the Fujimaki citation in the field of high temperature superconductivity. A first reason is that polyimide has a melting point of 451°C. Niobium can be sputtered or evaporated onto this sort of substrate, permitting construction of the device disclosed by Fujimaki in the field of low temperature superconducting devices. However, it is not possible to form YBCO on flexible polyimide films, as the substrate needs to be held at temperatures over 700°C to form YBCO in every known type of deposition process, in order to achieve the oxidation needed to achieve a superconducting stoichiometry in the YBCO layer.

Another reason why the Fujimaki citation cannot be directly adapted to the field of high

temperature superconductivity is that the device disclosed in Figure 7B of Fujimaki and discussed at paragraph 10 of the machine translation of Fujimaki includes a crossover in the pick up coil loop. Figure 7B shows crossed over superconductors proximal to the SQUID 43. Once again, such crossovers are not achievable in high temperature superconductors involving the formation of ceramic YBCO superconductors over a Hastelloy flexible substrate. It is noted that the flexible gradiometer of the examples of the present invention comprises a single continuous loop with no cross over. For this reason also, it is respectfully submitted that the Fujimaki citation would not have taught or motivated the skilled artisan in a manner that would have yielded the present invention.

Fujimaki also teaches that the superconducting pickup loops should be connected directly to the SQUID (see paragraph 10 of the machine translation and Figure 7B, in which the SQUID 43 is formed upon the same substrate as the superconducting pickup loop wires). It remains the case today, and was certainly the case before the priority date of the present application, that it is impossible to connect a YBCO ceramic connector directly to a SQUID, as the ability to create superconducting joins has still not been achieved. This is in contrast to low temperature superconductivity materials such as niobium in which it is possible to form direct joins between niobium pick up loops and a niobium SQUID. For this reason also, it is respectfully submitted that the skilled artisan would not have been taught or motivated by the Fujimaki disclosure to attempt to directly connect superconducting pickup loops to a SQUID, formed of YBCO on Hastelloy.

Claim 1 recites, among other things, a high temperature superconducting pickup loop, and also recites a flux transformer configured for inductive coupling of the signals detected by

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the pickup loop to a SQUID. Applicant respectfully submits that, in view of the foregoing arguments, claim 1 and its dependencies are patentable. Likewise, independent claim 23 and its dependencies, and independent claim 36 and its dependencies, are patentable.

Request for Allowance

It is believed that this Amendment places the application in condition for allowance, and early favorable consideration of this Amendment is earnestly solicited.

If, in the opinion of the Examiner, an interview would expedite the prosecution of this application, the Examiner is invited to call the undersigned attorney at the telephone number listed below.

The Office is hereby authorized to charge any fees, or credit any overpayments, to Deposit Account No. **11-0600**.

Respectfully submitted,
KENYON & KENYON LLP

Dated: October 14, 2008

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